

Rpt. 13.

No. 845

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 27 SEP 1932

Date of writing Report 17th Aug. 1932 When handed in at Local Office 17th Aug. 1932 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 22nd June Last Survey 6th August 1932
Reg. Book. (Number of Visits.....8.....)

68128 on the Steel Screw Steamer "NAGOYA MARU". Tons { Gross 6049.31
Net 3729.01

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha Yard No. 503 When built 1932

Owners Ishihara Gomei Kaisha. Port belonging to Fuchu.

Electric Light Installation fitted by Nagasaki Works, Mitsubishi Zosen Kaisha, Ltd. Contract No. When fitted 1932

System of Distribution Two wire system. ✓

Pressure of supply for Lighting 110 volts, Heating / volts, Power 110 volts. ✓

Direct or Alternating Current. Lighting Direct current ✓ Power Direct current ✓

If alternating current system, state frequency of periods per second /

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes ✓

Generators, do they comply with the requirements regarding rating Yes ✓, are they compound wound Yes ✓

are they over compounded 5 per cent. Yes ✓, if not compound wound state distance between each generator /

Where more than one generator is fitted are they arranged to run in parallel Yes ✓, is an adjustable regulating resistance fitted in series with each shunt field Yes ✓

Are all terminals accessible, clearly marked, and furnished with sockets Yes ✓, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes ✓

Are the lubricating arrangements of the generators as per Rule

Position of Generators Engine room, starboard side. ✓

is the ventilation in way of the generators satisfactory Yes ✓, are they clear of all inflammable material Yes ✓

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators / and /

are the generators protected from mechanical injury and damage from water, steam or oil Yes ✓

are their axes of rotation fore and aft Yes ✓

Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes ✓ are the prime movers and their respective generators in metallic contact Yes ✓

Main Switch Boards, where placed Engine room, starboard, aft of generator. ✓

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard /

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes ✓

are they protected from mechanical injury and damage from water, steam or oil Yes ✓, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards / and /

are they constructed wholly of durable, non-ignitable non-absorbent materials Yes ✓, is all insulation of high dielectric strength and of permanently high insulation resistance Yes ✓

if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes ✓

and is the frame effectively earthed Yes ✓. Are the fittings as per Rule regarding:— spacing or shielding of live parts

Yes ✓, accessibility of all parts Yes ✓, absence of fuses on back of board Yes ✓, proportion of omnibus bars Yes ✓

individual fuses to voltmeter, pilot or earth lamp Yes ✓, connections of switches Yes ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches A double pole circuit

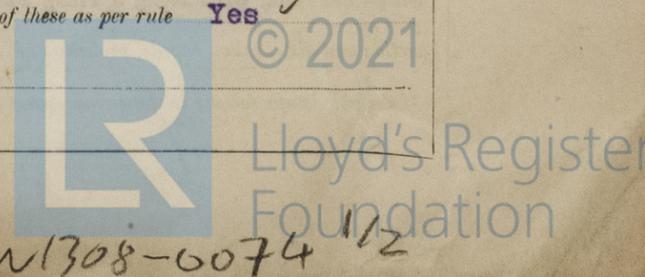
breaker with overload release, reverse current trip and time-lag device and single pole equalizer switch interlocked with the circuit breaker as per rule, and a double pole knife switch for each generator: A double pole knife switch and an enclosed fuse on each pole for each outgoing circuit. ✓

Instruments on main switchboard 2. ✓ ammeters 2. ✓ voltmeters / synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Lamps. ✓

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes ✓

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes ✓



Cables: Single, twin, concentric, or multicore Single or Multicore are the cables insulated and protected as per Tables IV or V of the Rules Yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5 volt for Lighting. 7 volt for Power.

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound /

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage Yes

Support and Protection of Cables, state how the cables are supported and protected Clamped to galvanized perforated steel plate by metal clips and protected by sheet steel cover or iron pipe where necessary.

If cables are run in wood casings, are the casings and caps secured by screws Yes, are the cap screws of brass Yes, are the cables run in separate grooves Yes. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII Yes

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements Yes

Joints in Cables, state if any, and how made, insulated, and protected /

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed Yes state the material of which the bushes are made Lead

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Metallic coverings of electric cables earthed as required by Rules: Earthing connections of Wireless Telegraph and Radio

Compass each .00715 sq. in. sectional area. are their connections made as per Rule Yes

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule Yes

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven 14 K.W.D.C. Emergency generator driven by kerosene engine, fitted in emergency dynamo room on boat deck, supplies the power for Em. lighting throughout the ship, Em. bilge pump, Navigation light, boat embarkation light, and wireless telegraph. Each circuit controlled by d.p. knife switch and d.p. enclosed fuses on Em. switchboard can be fed from main & Em. switchboard.

Navigation Lamps, are these separately wired Yes, controlled by separate switch and separate fuses Yes, are the fuses double pole Yes

are the switches and fuses grouped in a position accessible only to the officers on watch Yes

has each navigation lamp an automatic indicator as per Rule Yes

Secondary Batteries, are they constructed and fitted as per Rule /

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight Yes

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected /

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected /

how are the cables led /

where are the controlling switches situated /

Searchlight Lamps, No. of /, whether fixed or portable /, are their fittings as per Rule /

Arc Lamps, other than searchlight lamps, No. of /, are their live parts insulated from the frame or case /, are their fittings as per Rule /

Motors, are their working parts readily accessible Yes, are the coils self-contained and readily removable for replacement Yes

are the brushes, brush holders, terminals and lubricating arrangements as per Rule Yes, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material Yes

are they protected from mechanical injury and damage from water, steam or oil Yes are their axes of rotation fore and aft Yes

if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type /, if not of this type, state distance of the combustible material horizontally or vertically above the motors / and /

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule /

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule /

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings /

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office /

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	15	110	136	550	Steam Engine.		
APXILIARY								
EMERGENCY	1	14	110	127	1500	Kerosene Engine.	Kerosene Oil	
ROTARY TRANSFORMER	1	1 K.V.A.	100	10	3330	D.C. 1.5 HP 100 V 19 A Motor.		
	1	1/2 "	100	2.5	3800	D.C. .5 HP 30 V 20 A Motor.		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
1	No. 1 Main dynamo	2	.18598	37	.08	126	60	Rubber	Lead covered
2	Equalizer	1	.1168	"	.064	"	30	"	"
3	Emergency dynamo	2	"	"	"	127	20	"	"
4	Inter Communication	2	"	"	"	"	170	"	"
5	Em. bilge pump M.	2	"	"	"	120	220	"	"
6	Wireless switchboard	2	.01267	7	.048	20	300	"	"
7	"	2	"	"	"	"	130	"	"
8	Motor for 1 KVA Gen.	2	.00701	"	.036	19	"	"	"
9	1 KVA Gen. for Wl.	2	"	"	"	10	"	"	"
10	Motor for 1/2 KVA Gen.	2	"	"	"	20	"	"	"
11	1/2 KVA Gen. for Wl.	2	"	"	"	2.5	"	"	"
12	Secondary battery	2	"	"	"	20	10	"	"
13	3 HP Ref. Comp. Motor	2	.01267	"	.048	28.5	90	"	"
14	1.1 KW Lub. oil purifier motor	2	.00701	"	.036	14.3	70	"	"
15	2 HP workshop Motor	2	"	"	"	20.7	60	"	"
16	Fusebox for brine pump & Drill M.	2	.00322	1	.064	9	50	"	"
17	1/2 HP Brine pump M.	2	"	1	"	5	35	"	"
18	1/2 HP Drill motor.	2	"	1	"	4	4	"	"
19	No. 1 Submain board	2	.03438	19	.048	55.3	130	"	"
20	No. 1 Dist. board	2	.00701	7	.036	9.6	100	"	"
21	No. 2 " "	2	"	"	"	6.4	36	"	"
22	No. 3 " "	2	"	"	"	15.6	100	"	"
23	No. 4 " "	2	"	"	"	17.8	36	"	"
24	No. 5 " "	2	"	"	"	5.9	370	"	"
25	No. 2 Submain board	2	.01267	"	.048	26.5	130	"	"
26	No. 6 Dist. board	2	.00701	"	.036	6.2	180	"	"
27	No. 7 Dist. board	2	"	"	"	11.1	4	"	"
28	No. 8 " "	2	"	"	"	9.2	74	"	"
29	No. 3 Submain board	2	.01267	"	.048	27.6	130	"	"
30	No. 9 Dist. board	2	.00701	"	.036	11.5	36	"	"
31	No. 10 " "	2	"	"	"	16.1	4	"	"
32	No. 4 Submain board	2	.01267	"	.048	26	26	"	"
33	No. 11 Dist board	2	.00701	"	.036	11	120	"	"
34	No. 12 " "	2	"	"	"	15	2	"	"

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
35	Cut-out for bus-bar lamp.	2	.00181	1	.048	2.1	26	"	"
36	No. 1 Fuse board	2	.02252	7	.064	43.8	100	"	"
37	No. 5 Submain board	2	"	"	"	25.8	180	"	"
38	No. 3 Hatch cargo light	2	.00701	"	.036	10.2	90	"	"
39	Flex. cord for cargo lamp	2	.00475	168	.006	3	72	"	Hemp braided flex cord.
40	Flex cord for cargo cluster	2	"	168	"	2.4	72	"	"
41	No. 2 Hatch cargo light	2	.00701	7	.036	7.8	36	"	Lead covered
42	Flex cord for cargo lamp	2	.00475	168	.006	3	72	"	Hemp braided flex cord.
43	Flex cord for cargo cluster	2	"	"	"	2.4	"	"	"
44	No. 6 Submain board	2	.00701	7	.036	18	110	"	Lead covered
45	No. 5 Hatch cargo L	2	.00701	7	.036	7.8	30	"	Lead covered.
46	Flex cord for cargo lamp	2	.00475	168	.006	3	72	"	Hemp braided flex cord.
47	Flex cord for cargo cluster	2	"	"	"	2.4	"	"	"
48	No. 7 Submain board	2	.00701	7	.036	24.4	130	"	Lead covered
49	No. 13 Dist board	2	"	"	"	13.2	36	"	"
50	No. 14 " "	2	"	"	"	11.2	2	"	"
51	No. 2 Fuse board	2	"	"	"	8.7	5	"	"
52	No. 3 " "	2	"	"	"	12	5	"	"
53	Navigation light	2	"	"	"	2.2	220	"	"
54	Fore mast head lamp	2	.00322	1	.064	.4	414	"	"
55	" " " "	2	"	1	"	.4	114	"	Lead covered & armoured
56	Star, side lamp	2	"	1	"	.4	86	"	Lead covered
57	Port " " " "	2	"	1	"	.4	84	"	"
58	Main mast head lamp	2	"	1	"	.4	440	"	"
59	" " " "	2	"	1	"	.4	158	"	Lead covered & armoured
60	Stern lamp	2	"	1	"	.4	646	"	Lead covered.

All Conductors are of annealed copper conforming to British Standard Specification No. 7.
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
 The foregoing is a correct description.

NAGASAKI WORKS, MITSUBISHI ZOSSEN KAISHA, LTD.

S. Inotera
 Electrical Engineers.
 GENERAL MANAGER.

Date *2/9/32*

COMPASSES.

Distance between electric generators or motors and standard compass **73 feet from Motor-generator for Wireless telegraph.**

Distance between electric generators or motors and steering compass **73 " " " " " " " "**

The nearest cables to the compasses are as follows:—

A cable carrying **0.2** Ampères **1** feet from standard compass **1** feet from steering compass.

A cable carrying / Ampères / feet from standard compass / feet from steering compass.

A cable carrying / Ampères / feet from standard compass / feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power **Yes**

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted **Yes**

The maximum deviation due to electric currents was found to be **Nil** degrees on **Any and every** course in the case of the standard compass, and **Nil** degrees on **Any and every** course in the case of the steering compass.

NAGASAKI WORKS, MITSUBISHI ZOSSEN KAISHA, LTD.

S. Inotera
 Builder's Signature.
 GENERAL MANAGER.

Date *2/9/32*

Is this installation a duplicate of a previous case **No.** If so, state name of vessel /

General Remarks (State quality of workmanship, opinions as to class, &c.)

The materials and workmanship are good and the installation has been fitted in accordance with the Rules, tested under full working conditions and found satisfactory.

Plans sent under separate cover of:- Wiring Diagram of Power. Lighting & Cabin Fan.

It is submitted that this vessel is eligible for THE RECORD, Elec. light.

cm.
4/10/32.

Total Capacity of Generators **44** Kilowatts.

The amount of Fee ... **£ 352:79** : { When applied for **12. 8. 19. 32**
 Travelling Expenses (if any) £ : : { When received **25. 8. 19. 32** *blh*

George Anderson
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec. Lt.

Assigned

1m. 2. 98.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

